Work Order ID 159812

159812

Wednesday, April 19, 2017 10:20:17 AM

Item ID: D5332-043 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Rib Assembly

Start Date: 4/19/2017 **Start Qty:** 4.00 *4* **Cust Item ID:**

Required Date: 4/21/2017 **Req'd Qty:** 4.00 *4* **Customer:**

Reference: SCHEDULED

Run Start *NR1*

Approvals: **Process Plan:** DAS **Date:** APR 19 2017 **Tooling:** **Date:**

Stop *NR2*

QC: 21 9-89 **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D5332	B								
100	Weld per dwg A/R S.S. rod Batch: M134442	0.00				CJM	17/04/20		
100 Large Fab									
Large Fab	**Memo**	0.00							
	1- Cut D5332-5 as per dwg 2- Drill holes as per dwg D5332 using DT10192 3- Remove identification marks and deburr 4- Weld bushing in rib as per dwg and grind flush								
110	QC9- Inspect visual per QSI004- Fusion Welds	0.00				①	17.04.21		DAS 9 9-89
110 QC	**Memo**	0.00							
Quality Control									
120	QC5- Inspect part completeness to step on W/O	0.00				①	17.04.21		DAS 9 9-89
120 QC	**Memo**	0.00							
Quality Control									

DART AEROSPACE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No.	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval

Description Work Order Deviation	Disposition	
		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause

Environment	☐	☐	No Re-verfication
Design	☐	☐	Operator
Doc/Data	☐	☐	Offset/Setup
Equip/Tooling	☐	☐	Supplier
Handling/Pre	☐	☐	Training
Material	☐	☐	Use for Testing
Internal Transport	☐	☐	Poor Information
Tribal Knowledge	☐	☐	Rushing
LOA	☐	☐	Product Improvement
Substation	☐	☐	Process Improvement
Past Expiry Date	☐	☐	Manufacturing Process
Misidentified	☐	☐	Past Due

FAULT CATEGORY

☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence

☐ OTHER :

Work Order ID 159812

159812

Wednesday, April 19, 2017 10:20:17 AM

Item ID: D5332-043 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Rib Assembly

Start Date: 4/19/2017 **Start Qty:** 4.00 *4* **Cust Item ID:**

Required Date: 4/21/2017 **Req'd Qty:** 4.00 *4* **Customer:**

Reference: SCHEDULED

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: WWA 04	0.00							
130									
Packaging	**Memo**	0.00							
Packaging	***STOCK IN BASKET CELL***				(4)	CJM	17/04/25		
140	QC21- Final Inspection - Work Order Release	0.00							
140							17/5/4		
QC	**Memo**	0.00							
Quality Control									

DAS
21
9-89

MAY 0 3 2017

DART AEROSPACE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No.	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval

Description Work Order Deviation	Disposition	
		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause				FAULT CATEGORY			
Environment	☐	☐	No Re-verfication	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
Design	☐	☐	Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
Doc/Data	☐	☐	Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
Equip/Tooling	☐	☐	Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
Handling/Pre	☐	☐	Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
Material	☐	☐	Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
Internal Transport	☐	☐	Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
Tribal Knowledge	☐	☐	Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
LOA	☐	☐	Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
Substation	☐	☐	Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence
Past Expiry Date	☐	☐	Manufacturing Process				
Misidentified	☐	☐	Past Due	☐ OTHER :			

Picklist Print

Wednesday, April 19, 2017 10:20:23 AM

Work Order ID: 159812

159812

Parent Item: D5332-043

D5332-043

Parent Item Name: Rib Assembly

Start Date: 4/19/2017 **Required Date:** 4/21/2017

Start Qty: 4.00 **Required Qty:** 4.00

Comments: IPP REV:A 15.10.14 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D5338-1		Manufactured	No			100	Each	0.0000	2	8			
D5338-1					B M159303				** 8	CJM	17/04/20		
Bushing													
M304TS0.500W.049		Purchased	No			100	f	1,311.146	1.83	7.705263			
M304TS0.500W.049									**	CJM	17/04/20		
Square Tubing													

Location		Loc Qty	Loc Code	
WA004		1311.14684		
	M135215	624		
	M136011	21.64684		
	M136698	61.5		
	M137257	604		8

DART AEROSPACE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order update only ☐

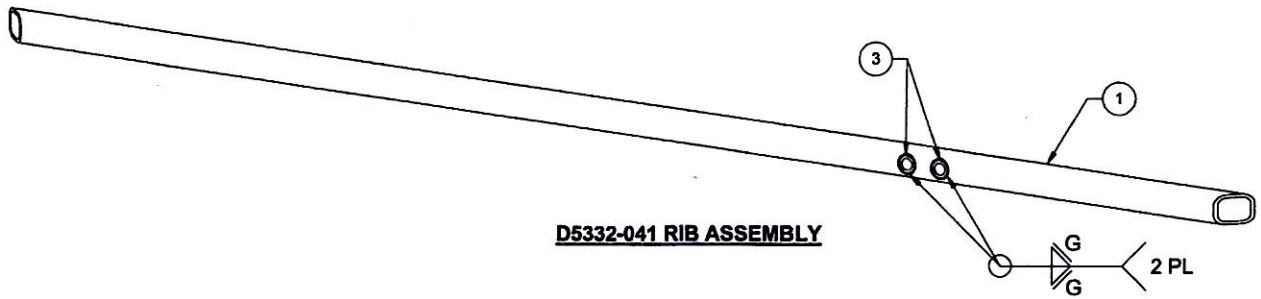
Work Order: _____ Part No. _____ NCR No.	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval

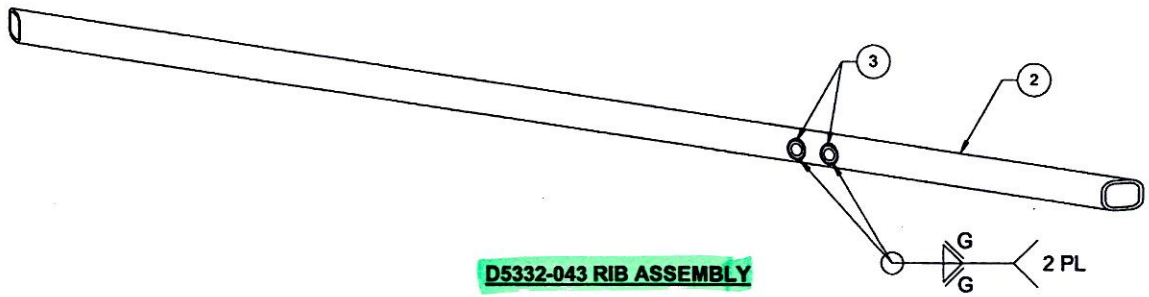
Description Work Order Deviation	Disposition	
		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause				FAULT CATEGORY			
Environment	☐	☐	No Re-verfication	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
Design	☐	☐	Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
Doc/Data	☐	☐	Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
Equip/Tooling	☐	☐	Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
Handling/Pre	☐	☐	Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
Material	☐	☐	Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
Internal Transport	☐	☐	Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
Tribal Knowledge	☐	☐	Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
LOA	☐	☐	Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
Substation	☐	☐	Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence
Past Expiry Date	☐	☐	Manufacturing Process				
Misidentified	☐	☐	Past Due	☐ OTHER :			

ITEM	QTY -041	QTY -043	P/N	DESCRIPTION
	X		D5332-041	RIB ASSEMBLY
		X	D5332-043	RIB ASSEMBLY
1	1		D5332-3	RIB
2		1	D5332-5	RIB
3	2	2	D5338-1	BUSHING



D5332-041 RIB ASSEMBLY



D5332-043 RIB ASSEMBLY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 159812 MCJ
17-04-19

NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -041: 0.52 lbs
-043: 0.48 lbs
8) WELD PER DART QSI 004

RELEASED
2017 -03- 22
ECN 17-535

APPROVED

REV.	DESCRIPTION	BY	DATE
B	ADDED -19 (ZN B4-4)	RF	17.02.09
A	NEW ISSUE	RF	15.08.10

DESIGN	RF
DRAWN	RF
CHECKED	VS
MFG. APPR.	DD
APPROVED	HS
DE APPR.	DS
DATE	17.02.09

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D5332 REV. B
SHEET 1 OF 4
TITLE RIB ASSEMBLY
SCALE NTS

COPYRIGHT © 2015 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date:

Work Order update only ☐

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. _____	Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
NCR No.	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval

Description Work Order Deviation	Disposition	
		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

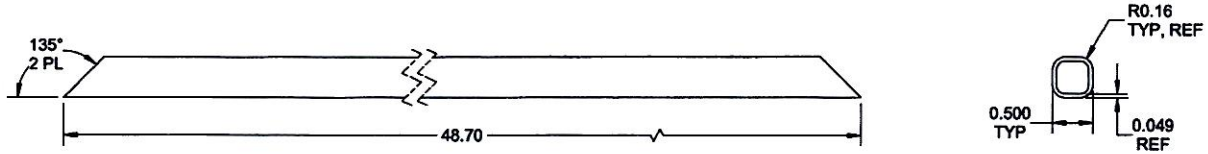
Root Cause

Environment	☐	☐	No Re-verfication
Design	☐	☐	Operator
Doc/Data	☐	☐	Offset/Setup
Equip/Tooling	☐	☐	Supplier
Handling/Pre	☐	☐	Training
Material	☐	☐	Use for Testing
Internal Transport	☐	☐	Poor Information
Tribal Knowledge	☐	☐	Rushing
LOA	☐	☐	Product Improvement
Substation	☐	☐	Process Improvement
Past Expiry Date	☐	☐	Manufacturing Process
Misidentified	☐	☐	Past Due

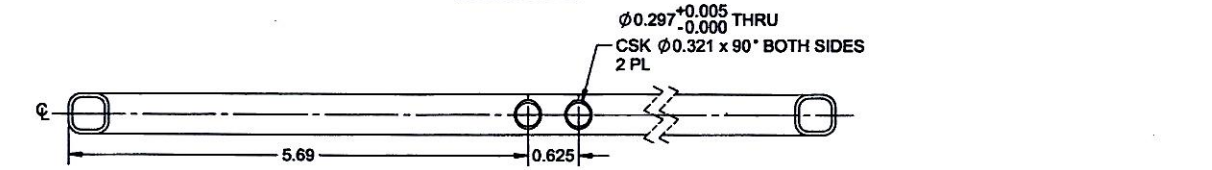
FAULT CATEGORY

☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence

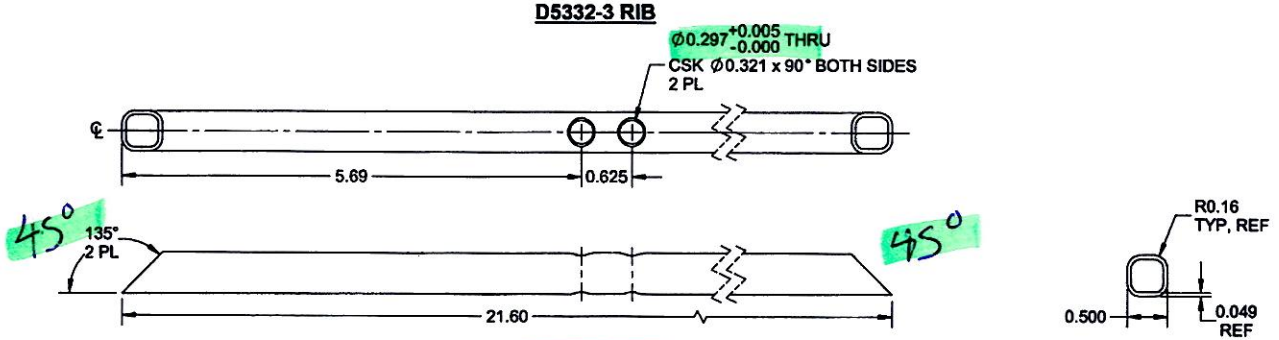
☐ OTHER :



D5332-1 RIB



D5332-3 RIB



D5332-5 RIB

NOTES:
1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.50 X 0.50 X 0.049 WALL
PER ASTM A554 MILL FINISH OR ASTM A269 MILL FINISH
REF DART SPEC. M304TS0.500W.049
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -1: 1.06 lbs
-3: 0.52 lbs
-5: 0.47 lbs

RELEASED
2017 -03- 22

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	VS	DRAWING NO. D5332 — REV. B — SHEET 2 OF 4
MFG. APPR.	DD	
APPROVED	HS	TITLE: RIB ASSEMBLY — SCALE: NTS
DE APPR.	DS	
DATE	17.02.09	

COPYRIGHT © 2015 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.